

**Response**

Applicant: Nicola Da Dalt

Serial No.: 10/541,049

Filed: February 13, 2006

Docket No. 1435.128.101/12928US

Title: DEVICE AND METHOD FOR FREQUENCY SYNTHESIS

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**IN THE CLAIMS**

1-16. (Cancelled)

17. (Previously Presented) A device for frequency synthesis comprising:

an oscillator driven for generating, at a frequency out of a set of at least two possible output frequencies, an output signal;

a control device for driving the oscillator, wherein the control device, for the purpose of generating a desired frequency that is not included in the set of possible output frequencies is configured to drive the oscillator to alternately generate at least two different output frequencies, out of the set of possible output frequencies, such that an average value of the generated output frequencies over a certain time period is the desired frequency plus or minus a relative frequency error, wherein the control device is configured to drive the oscillator such that the at least two generated output frequencies are alternated at a selected average switching frequency that is less than the at least two possible output frequencies; and

a frequency divider connected to the output of the oscillator and configured to reduce the relative frequency error generated at the selected average switching frequency, wherein the selected average switching frequency is selected to be smaller than a switching frequency necessary to obtain a desired relative frequency error without the frequency divider.

18. (Previously Presented) The device of claim 17, wherein the control device is configured to drive the oscillator with a bit stream generated according to a delta-sigma-principle.

19. (Previously Presented) The device of claim 17, wherein the control device is configured to drive the oscillator such that the at least two generated output frequencies are alternated at an average switching frequency that is greater than the reciprocal value of the certain time period.

20.-21 (Cancelled)

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22. (Previously Presented) The device of claim 17, wherein the oscillator comprises a digitally controlled oscillator.

23. (Previously Presented) The device of claim 17, wherein the oscillator comprises a ring oscillator, wherein a current, out of a set of possible currents, can be supplied to the ring oscillator for the purpose of driving the ring oscillator.

24. (Cancelled)

25. (Previously Presented) The device of claim 17, wherein the device is of digital design.

26.-28. (Cancelled)

29. (Previously Presented) A method for frequency synthesis comprising:

providing an oscillator driven to generate an output signal having an output frequency out of a set of possible output frequencies;

driving the oscillator for the purpose of generating a desired frequency that is not included in the set of possible output frequencies, in such a way that the oscillator alternately generates at least two different output frequencies, out of the set of possible output frequencies, such that the average value of the at least two generated output frequencies over a certain time period is the desired frequency plus or minus a relative frequency error; and

alternating the at least two generated output frequencies at a selected average switching frequency that is less than the at least two different output frequencies; and

dividing, with a frequency divider, the frequency of the output signal generated by the oscillator to reduce the relative frequency error generated at the selected average switching frequency, wherein the selected average switching frequency is selected to be smaller than a switching frequency necessary to obtain a desired relative frequency error without the frequency divider.

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30. (Previously Presented) The method of claim 29, wherein driving the oscillator comprises driving the oscillator with a bit stream generated according to a delta-sigma-principle.

31. (Previously Presented) The method of claim 29, comprising alternating the at least two generated output frequencies at an average switching frequency that is greater than the reciprocal value of the certain time period.

32.–39. (Cancelled)

40. (Cancelled)